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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Andreas Dietz

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EXAMINER

LEADER, WILLIAM T

ART UNIT

PAPER NUMBER

1795

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03/13/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/534,376	Applicant(s) DIETZ ET AL.	
	Examiner WILLIAM T. LEADER	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-11 and 13-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-11 and 13-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 1, 2009, has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 9-11 and 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Applicant has amended claim 9 to add the limitation of claim 12, which recites that the deposition bath includes suspended silicon particles. Thus, claim 9 may be interpreted as including two different types of particles, i.e., particles from the initially recited group of Mg, Ti and Zn, and the newly silicon particles. Dependent claim 11 recites that "the particles" are alloyed with at least one of (a) Ni, (b) Co and (c) Pt. If claim 9 is interpreted as two different types of particles, it is not clear which of the types of particles recited in claim 9 as amended claim 11 refers to, the initially recited group of particles or the newly recited silicon particles.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 9, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by German patent publication DE 37 16935 A1 to Thoma.

7. The Thoma '935 publication is directed to the production of a corrosion protection layer by galvanic (electrolytic) dispersion coating. As shown in the English language machine translation of claims 1 and 2, the process includes the steps of electrolytic deposition of nickel or cobalt in a deposition bath in which particles of a titanium-silicon compound, but not including chromium, are suspended, the particles becoming dispersed in the coating, and of heat treating the coated substrate. Applicant has amended claim 9 to include the limitation of claim 12 that the deposition bath includes suspended silicon particles. This limitation does not recite that the particles consist of silicon, and is interpreted as including particles which contain only silicon and particles which contain silicon and one or more other elements. Additionally, claim 9 does not recite that the silicon particles are necessarily different in composition than the particles including at least one of Mg, Ti and Zn. The Thoma '935 patent publication is considered to teach the process of claim 9.

8. With respect to claim 13 the particles used by Thoma contain silicon, and the silicon is alloyed with titanium. With respect to claim 14, Thoma '935 recites particles of a size preferably

in the range of 1 to 5 μm (claim 3). This range falls within the range of 1-50 μm recited by applicant. In the operative example, Thoma discloses the use of a grain size within a preferred range of 2 to 5 μm . Particles of this size fall within the range recited by applicant and anticipate applicant's claim. See MPEP 2131.03.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over German patent publication DE 37 16935 A1 to Thoma.

12. The German patent publication DE 37 16935 A1 to Thoma is interpreted as above. Claim 15 recites a coating thickness of 10 to 100 μm . Thoma '935 recites a coating thickness between 10 and 1000 μm (claim 6). Choice of a value from within the range disclosed by Thoma '935 would have been *prima facie* obvious because Thoma shows values within the range to be useful. See MPEP 2144.05.

13. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over German patent publication DE 37 16935 A1 to Thoma in view of Thoma et al (US 4,895,625).

14. German patent publication DE 37 16935 A1 to Thoma is interpreted as above. Claim 11 differs by reciting that the particles are alloyed with at least one of Ni, Co and Pt. The Thoma et al patent '625 is directed to electrolytically depositing a protective coating on structural components such as gas turbine blades. See the abstract. The process includes the step of electrodeposition of Ni in a deposition bath in which particles including Al with no Cr are suspended. The particles become occluded in the coating. See column 2, lines 44-54. The coated substrate is heat treated whereby the heat treatment causes alloying. See column 2, lines 54-58. Thoma discloses that the type of powder mixture included in the electrolytic bath depends on the particular requirements that must be met by the coating (column 3, lines 55-62). Thoma discloses a number of alloys that are useful (column 3, lines 63-65). Constituents of these alloys include Ni, Co and Si. It would have been obvious to have included Ni or Co as an alloying constituent of the particles in the process of Thoma '935 because these elements are known to be useful in forming a corrosion resistant coating as shown by Thoma et al '625.

15. Claim 10 recites that the particles include an oxide layer. Thoma et al '625 disclose the step of passivating the particle surfaces. The passivation contributes to uniform film or layer structure. See column 3, lines 37-50. It would have been obvious to have performed a step of forming an oxide layer to passivate the particles in the process of Thoma '935 because the structure of the deposited layer would have been improved as taught by Thoma et al '625.

16. Claims 9, 13, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over German patent publication DE 37 16935 A1 to Thoma in view of Nazmy et al (US 4,627,896) and McMordie et al (US 5,650,235).

17. The German patent publication DE 37 16935 A1 to Thoma is interpreted as above. Claim 9 may be interpreted as requiring the inclusion in the deposition bath of two different types of particles, the first type including at least one of Mg, Ti and Zn and the second type being silicon. The Nazmy et al patent is directed to a process for forming a corrosion protection coating which contains protective oxide-forming elements. See the title and abstract. Nazmy et al disclose that silicon is an element that forms a protective oxide, and that in many respects a SiO₂-forming surface layer is superior to Cr₂O₃- and Al₂O₃-forming layers since it exhibits higher oxidation resistance at high temperatures. See column 1, lines 19-30.

18. The McMordie et al patent is directed to the production of a corrosion resistant coating. The coating may be formed by the application of an aluminum-silicon alloy powder (column 8, lines 22-28) or separate aluminum powder and silicon powder (column 6, lines 16-19), and heating to diffuse the aluminum and silicon into the substrate to form a stable and corrosion

resistant coating (column 6, lines 19-25). Thus, it is known in the art that silicon may be incorporated into an electroplated coating by using a powder that is either an alloy of silicon with another element, or by the use of powder which consists of silicon.

19. The prior art of record is indicative of the level of skill of one of ordinary skill in the art. It would have been obvious at the time the invention was made to have included silicon powder along with the powder used in the process of Thoma '935 since the amount of silicon in the coating would have been increased and the inclusion of silicon is desirable because of its corrosion protection properties as shown by Nazmy et al and because it is known that powder consisting of silicon may be co-deposited from an electroplating bath as shown by McMordie et al. Claims 13, 14 and 15 are obvious for the reasons given previously.

20. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over German patent publication DE 37 16935 A1 to Thoma in view of Nazmy et al (US 4,627,896) and McMordie et al (US 5,650,235) as applied to claims 9, 13, 14 and 15 above, and further in view of Thoma et al (US 4,895,625).

21. The prior art is applied as above. It would have been obvious to have included Ni or Co as an alloying constituent of the particles in the process of Thoma '935 as recited in claim 11 because these elements are known to be useful in forming a corrosion resistant coating as shown by Thoma et al '625. It would additionally have been obvious to have performed a step of forming an oxide layer to passivate the particles in the process of Thoma '935 as recited in claim

10 because the structure of the deposited layer would have been improved as taught by Thoma et al '625.

Response to Arguments

22. Applicant's arguments filed January 13, 2009, have been fully considered but they are not persuasive. At page 4 of the Remarks, applicant argues that the deposition bath of Thoma '935 does not include suspended silicon particles, but particles of titanium and silicon. As noted above the limitation from claim 12 that has been added to claim 1 does not recite that the particles "consist of" silicon and, as written, is considered to be open to the inclusion of other constituents such as Ti in the particles. Dependent claim 11 may be read as requiring that the silicon particles be alloyed with Ni, Co or Pt.

23. With respect to claim 11, at page 6 of the Remarks, applicant argues neither Thoma '935 nor Thoma et al '625 discloses or suggests that the particles are alloyed with at least one of Ni, Co and Pt, and points out that the particles of Thoma et al '625 include chromium and/or aluminum. Applicant further argues that none of the alloy combinations provided by claim 11 contains chromium or aluminum. These arguments are not convincing. Thoma '935 discloses the inclusion of particles of silicon alloyed with titanium such as those included within the scope of instant claim 13. By including a particle that contains Ni and a particle that contains Co in the list of examples, Thoma et al '625 is considered to teach that Ni and Co are useful elements to include in alloy powders used to form a corrosion resistant coating. The combination of these known useful alloying elements in an alloy with other metals such as the Ti used by Thoma '935,

known to be useful for the same purpose, would have been obvious. Thoma'935 discloses a coating which is free of chromium. Applicant's claims do not exclude the presence of aluminum and, until the amendment of June 10, 2008, positively recited the inclusion of aluminum.

Applicant points out that none of the alloy powders of Thoma et al '925 include Pt. While this may be correct, claim 11 does not require that the particles contain Pt, only at least one of (a) Ni, (b) Co and (c) Pt.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM T. LEADER whose telephone number is (571) 272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William Leader/
March 10, 2009

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795